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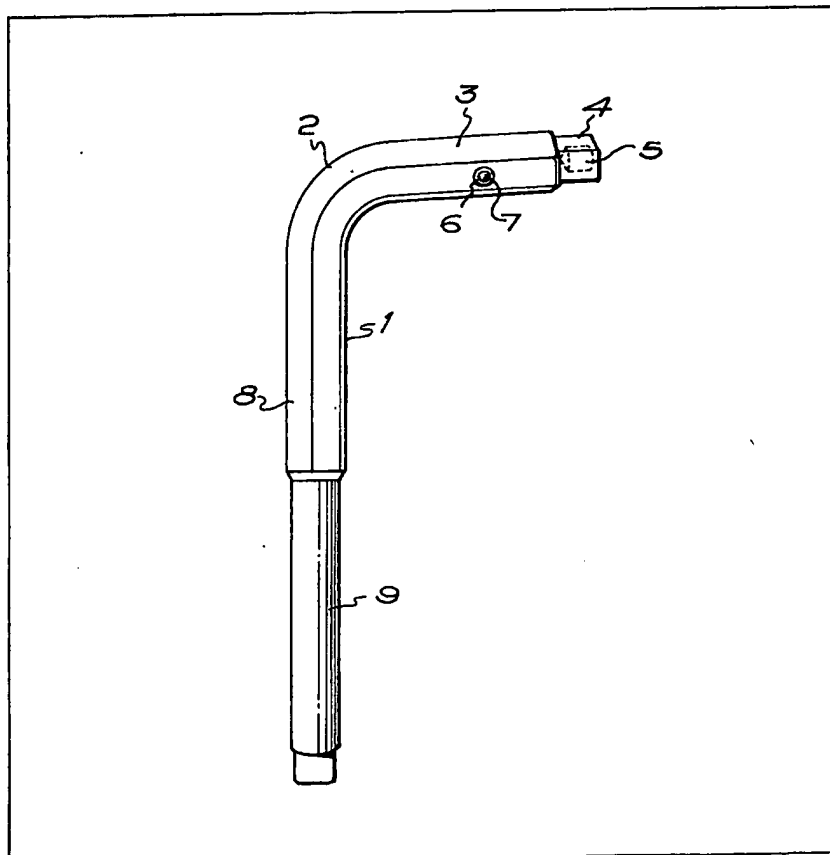
(71) Applicants
George Armstrong
Postle,
Baltic Road,
Felling Shore Industrial
Estate,
Felling,
Tyne and Wear.

(72) Inventors
George Armstrong Postle

(74) Agents
W. Reid Sharp & Co.

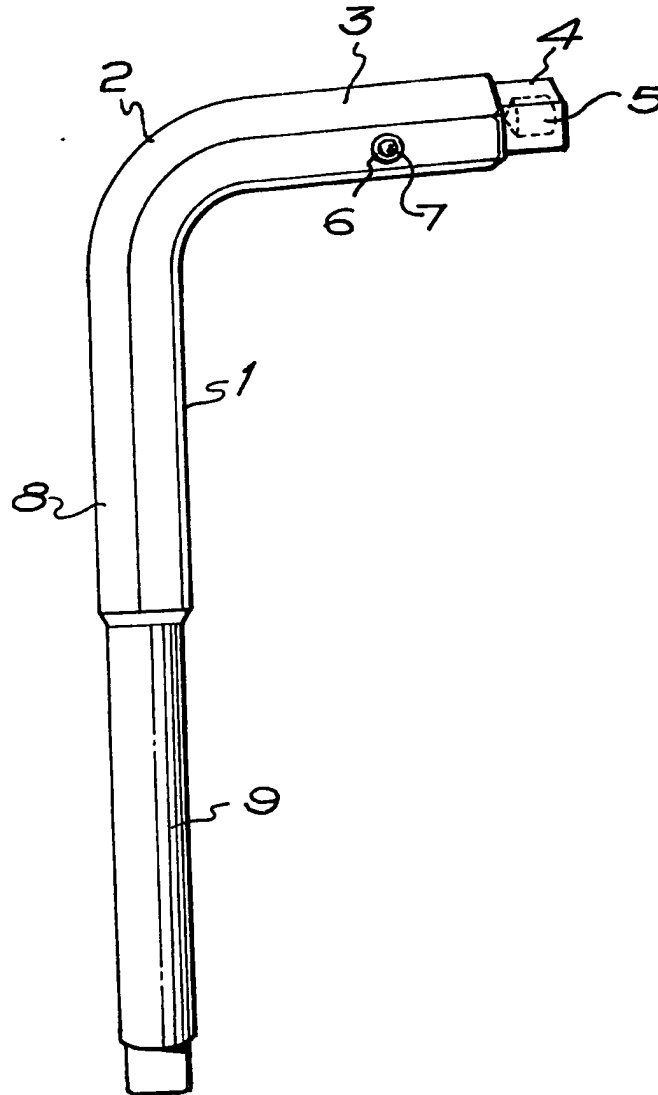
(54) Internal spanner

(57) An internal spanner comprises a bar of hexagonal cross-section bent into a substantially L-shaped configuration, the shorter leg 3 of which is formed with a squared end 4 with an axial blind bore 5, and provided on the hexagonal part with a stop in the form of a spring pin 6 in a bore 7 to limit penetration of the leg into a hexagonal bore. Alternatively the stop is a threaded grub screw or a welded washer. The longer leg 8 has its end part machined to provide a circular cross-section a and may have a square end.



The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

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SPECIFICATION

Internal spanner

- 5 This invention relates to an internal spanner, i.e. a tool having polygonally facted end for engaging inside a correspondingly shaped and dimensional aperture. Such apertures are found for example in valve tails and radiator plugs, and such tools are
- 10 accordingly suitable for disengaging and replacing such parts.
- The so called 'Alan Key' is such a tool, and consists of a bent hexagonal bar one end of which can be inserted in a hexagonal hole, and the other
- 15 end used as a lever for applying force thereto. British patent specification 1326010 describes a modification of the Alan Key whereby each end of a bent hexagonal bar is provided with a square cross-section end part for use in square apertures. This
- 20 form of key can be used on both hexagonal and square apertured parts, but whilst there is a clear limit to its penetration into a square aperture, the key can be inserted into a hexagonal aperture up to the bend in the tool, as of course is also the case with the
- 25 Alan Key. Some designs of radiator however have internal fins which adjacent the plug have a cut-out part. However if a key is pushed too far in, it may cause damage to the fins and thus cause a leak in the radiator.
- 30 It is an object of this invention to provide an internal spanner which cannot be pushed an excessive distance into a radiator.
- In accordance with the invention, a stop is provided on the end of the key, on the hexagonal part, at
- 35 a desired distance from the end.
- This stop may be in the form of a lateral pin spring dowel received in a blind bore in one face of the tool.
- In a typical example, the squared end of a key may extend 1 cm. from the end, and the leg of the key
- 40 forming the end be 6 to 7 cms. long. The stop is typically 3 to 3.5 cms from the end.
- Preferably, a handle is comprised by a part of the tool bent substantially at right angles to the leg having the stop.
- 45 This handle is preferably provided with a round cross-sectioned end part, so that if inserted into an aperture it cannot cause internal damage on being twisted.
- Alternatively the handle end could be formed with
- 50 a different tool, or a similar arrangement of squared end stop for use with apertures of a different size.
- A preferred embodiment of the invention will now be described by way of example with reference to the accompanying drawings, which is a view of an
- 55 internal spanner according to the invention.
- As shown in the Figure, an internal spanner is formed from a bar of hexagonal cross sectioned metal 1, bent at 2 to form an L-shape. The shorter leg
- 3 is formed at its extremity with a square cross-sectioned end part 4 for use as a tool for square
- 60 apertures and having a blind bore 5 (dotted lines) in its end face to enable the tool to be inserted without damage to any valve pins which may be present.
- This end part 4 extends over about 1 cm; while the
- 65 next 2 to 2.5 cms. of the hexagonal part of the leg

forms a tool for engaging hexagonal apertures, limited by a stop in the form of a spring pin 6 in a bore 7: This limits the distance to which the tool end can be inserted.

- 70 The other longer leg 8 has its free end machined to provide a circular cross-section handle part 9 which if inserted into a plug aperture in a radiator would cause no damage. Since it has no facets to snag internal pins.
- 75 Other forms of stop could be used, such as a grub screw in a tapped bore, or a washer welded into place.

CLAIMS

- 80 1. An internal spanner consisting of a hexagonal cross section bar bent into a substantial L-shape, and having one leg provided with a square cross-section end, and on the hexagonal part of the said one leg, a
- 85 stop to limit penetration of the spanner into an aperture.
2. A spanner according to claim 1 wherein the stop is in the form of a lateral spring pin dowel received in a blind bore in one face of the said one
- 90 leg of the tool.
3. A spanner according to claim 1 or 2 wherein the other leg of the L-shaped bar is provided with a round cross-sectioned end part.
4. A spanner according to claim 3 wherein the
- 95 round cross-sectioned end part terminates in a squared end.
5. An internal spanner substantially as hereinbefore described with reference to the accompanying drawing.

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